The Stroke and Heart Attack Prevention Program (SHAPP)

What is SHAPP?

When people keep their blood pressure under control, they can potentially avoid the debilitating and expensive complications of CVD: heart attack, stroke, and kidney disease. The Stroke and Heart Attack Prevention Program (SHAPP) is an educational and direct–service program targeted to low-income Georgians with hypertension. Patient services are provided through county health departments and include screening, referral to doctors, diagnosis, and treatment. The Research Triangle Institute, under contract with the Centers for Disease Control and Prevention and in cooperation with the Georgia Department of Human Resources and SHAPP district staff, conducted a study to determine whether SHAPP is cost–effective, and if so, why. Results were recently published.

About SHAPP

SHAPP was initially funded by the Georgia Legislature in 1974. Of the more than 15,000 patients served by SHAPP, most are aged 30–59 years and are African Americans. Most are not covered by either public or private health insurance and thus "fall between the cracks" of the health care system.

SHAPP is vital to Georgia given that—

- High blood pressure is a major risk factor for CVD.
- One of four Georgians has high blood pressure.[2]
- In 2001, Georgia's cardiovascular disease (CVD) mortality rate was 11% higher than the national average.[1]

Evaluating SHAPP

Although SHAPP advocates have long believed that the program more than pays for itself by preventing these complications of high blood pressure, a formal study was needed to evaluate its cost effectiveness. The evaluation involved in-depth case studies of two SHAPP programs—in the Augusta and Brunswick district clinics—with noteworthy blood pressure control rates. In the SHAPP Annual Report for 2003,[3] one district reported a 64% blood pressure control rate and the other a 60% rate. Both are significantly higher than the national average.[4] Statewide, SHAPP clients had a median control rate of approximately 60% in 2003.

This first evaluation of SHAPP provides preliminary evidence of the effectiveness of the hypertension program. Data were collected in the two clinics by—

- In–depth interviews with administrators, staff, and patients.
- Abstraction of medical records.
- Cost analyses to compare patient costs to the potential costs of not treating those patients.

Patient Outcomes

According to interviews with administrators and clinic staff in these two SHAPP clinics, the most important patient outcomes include the following:

1) Better awareness of the causes and effects of high blood pressure;

2) Better medication adherence; and

3) Better likelihood of keeping appointments.

High blood pressure is often referred to as the "silent killer," because most patients have no symptoms until they suffer a complication, such as heart attack or stroke. That's why improved medication compliance is one of SHAPP's significant accomplishments.

Interviews also suggest that, in these two clinics, SHAPP achieved high blood pressure control rates for several reasons: **easy enrollment, nonjudgmental and supportive care, frequent monitoring and perhaps most importantly, free or low–cost medications.**

- Patients said staff made time for them, were accepting and nonjudgmental of their low-income status, and treated them well.
- SHAPP staff write prescriptions for only 1–3 months to encourage frequent checkups.
- SHAPP clinic staff remind patients of their appointments by phone, and follow up with patients who don't keep appointments.
- Patient access to affordable medications through SHAPP is critical for medication adherence and is a cornerstone of the program. **Patients said they could not afford high blood pressure medication if SHAPP did not exist.** Most patients with high blood pressure require some type of medication in addition to making lifestyle modifications.

Patients said that through SHAPP they learned the importance of eating a nutritious, low-sodium diet, exercising, and taking medication consistently. The use of a protocol–driven, systematic, and comprehensive treatment system aided patient counseling.

Comparing Alternatives to SHAPP

Cost analyses compared overall SHAPP costs with two other hypothetical scenarios: if SHAPP did not exist and 1) its clients received no treatment (worst-case scenario) or 2) if its clients received treatment typical of the private sector (best-case scenario). The assumptions and expected outcomes were based on the medical literature.

Because SHAPP achieved above–average blood pressure control rates and offered care to all patients, it is estimated that clients in the two clinics would be expected to experience lower rates of hemorrhagic stroke, ischemic stroke, heart disease, and kidney failure compared with alternative worst-case and best–case scenarios.

- Differences in the estimated number of expected adverse outcomes translated into substantial differences in estimated costs. For example, it was estimated that the 543 patients in the Augusta SHAPP were expected to experience roughly 10 fewer adverse events than if they had received no treatment and 7 fewer than if they had received care in the best-case scenario.

- These projected differences translated into substantial estimated cost differences among the three treatment scenarios. For the Augusta clinic alone, total annual costs were estimated at $289,617 for worst-case scenario, $323,095 for best-case scenario, and $209,800 for SHAPP treatment. In both districts, SHAPP was the least expensive of the three treatment scenarios.

- The estimated cost per patient for those in the no-treatment group was $534 for adverse events alone versus $595 for the best-case scenario group and $486 for SHAPP patients, which included both preventive medical care and adverse-events costs.

It should be noted that SHAPP clients would be far more likely to experience the worst-case than the best-case scenario if SHAPP did not exist.

Cost–saving Components

Factors that contribute to SHAPP's cost-effectiveness include the following:

- All patients in SHAPP receive care, and many services are provided by nurses instead of physicians.
- Patients get frequent checkups, which encourages adherence to treatment protocols, both in terms of services (e.g., visits, lab work) and medications.
- SHAPP buys medications through state purchasing mechanisms that negotiate low prices.
- The SHAPP program does not begin treatment by using new and expensive (and not necessarily more effective) medications. Medications are added or changed according to a nationally accepted, evidence-based protocol.[5]

Critical SHAPP Components

In summary, several components of the SHAPP program appear to make it a successful program. These include:

- Easy enrollment.
- Dedicated staff.
- Affordable medication.
- Evidence-based treatment protocols for medications and lifestyle counseling.
- Ongoing patient follow-up and monitoring.
- Nurse-driven treatment program.

Further study is needed to determine if these components would contribute to successful high blood pressure programs in other settings.

"How would clients manage their blood pressure if there were no SHAPP?

"They wouldn't."

—Staff interviews, RTI

More Information

Preventing Chronic Disease: Public Health Research, Practice, and Policy. "A Cost Evaluation of the Georgia Stroke and Heart Attack Prevention Program" Vol. 3:No.1, January 2006.

References

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4. Hajjar I, Kotchen TA. Trends in prevalence, awareness, treatment, and control of hypertension in the United States, 1988–2000. *JAMA* 2003;290(2):199–206.
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